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ATTN : Geography Division, Chief Far Eastern Branch
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Terms of Reference for Geographic Research Project on Possible Locations for Guided Missile Ranges in Communist China.

REFERENCE: CM-0457/59, 9 April 1958 and Memorandum AD/RR, Same Subject, 28 April 1958.

In consultation with the Far Eastern Branch of the Geographic Division and OSI/GMD the Guided Missile Branch, ORR has prepared the terms of reference to be followed in the preparation of a study, requested in the referenced memorandum, of the geographical areas in China that would be feasible for use as a guided missile operational training and test range. This study will, insofar as practicable be patterned along the lines of CIA/RR-GR, 148, Possible Guided Missile Testing Ranges in the USSR with certain amendments and deletions made in conformity with individual characteristics of the geography, the economy and the level of technology of Communist China.

Terms of Reference

1. Population Density

Launching and impact area are probably where population is sparse. The hazard to population is high within a radius of 25 miles of the launch site and within about 125 miles of the impact area. For security reasons also, areas of sparse population are favored. This study should be limited to areas with population densities of between 10 and 25 persons per square kilometer.

2. Logistics

Several logistic factors must be considered, particularly for operational training launch sites. Probably any launch site selected would be within 50 or 100 miles of an existing rail line. Roads and an airfield are also needed, but they could easily be constructed if the terrain is not excessively rugged. Of particular importance is accessibility to external supplies of missiles, auxiliary equipment, missile components, fuels, and instrumentation. The site should be located where sufficient fresh water is available for 2,000 to 10,000 persons. Logistical requirements for the impact area are less restrictive -- reasonably good accessibility, an air-

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field, and facilities to care for 100 to 400 persons.

3. Distance Requirements

A range for operational training for ballistic missiles will require a range of at least 400 miles with possibly some capability for future extension to 1,000 miles.

4. Terrain

The launch site is likely to be located in an area of relatively flat terrain. Mountains, depressions, and deep valleys or gorges would hamper the development of extensive facilities. It is particularly important that the terrain between the launch area and existing rail facilities offer no major obstacle to the construction of spur rail lines and roads. The terrain should also be suitable for the construction of an airfield near by. Half tracked vehicles should have access to the entire area the year round. Heavy forest cover is a deterrent to vehicles movement and present a fire hazard.

5. Climate

Climatic factors most important to the selection of possible guided missile launching areas include temperature and precipitation, winds, surface visibility, and cloud cover. Annual precipitation should be low not over 18 inches with small time cover of snow. Average wind speed should be low. Surface visibility should be at least 2- $\frac{1}{2}$ miles all except 2 to 3 days a month cloud cover should not exceed 50 to 70 per cent of the time.

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